CSE571

Project Selection

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These slides are available on-line at:
http://www.cse.wustl.edu/~jain/cse571-09/
Overview

- Sample Projects
- Last Year’s Project
- Project Schedule
- HTML Intro
1. Review Projects

Review of:
- Network Attack tools
- Network Protection tools
- Wireless network attack tools
- Wireless network protection tools
- Digital Forensic Tools
- Bot nets
- Cross-site scripting
- Anti-DNS Pinning
- Hacker organizations, sites, …
- War driving techniques and tools
2. Hands-on Projects

- A tool to collect passwords in wireless
- A tool to monitor network traffic in open ports
- Using one the wireless attack tools to monitor the traffic and
- Develop a web site to collect passwords and
- Firewall bypass using port 80
- A honey pot to catch crackers
- Multi-Pot (multiple base stations to lure victims)
- WEP crackdown using passive monitoring and plain text attacks
- A tool to fool routers
- Identity Stealing Tool using web sites
- Identity Stealing Tool using phishing
- SPAM without detection
- Hardware to locate/pinpoint wireless access points
3. Programming Projects

- Compilation of Security Algorithms in C
- Compilation of Security Algorithms in Excel
- Efficient algorithm to find the private key from a given public key
- Develop a root kit for Windows/Linux/MAC
3. Survey Projects

Recent Security Issues in Internet Engineering Task Force (IETF)

- btns  Better-Than-Nothing Security
- dkim  Domain Keys Identified Mail
- emu   EAP Method Update
- hokey Handover Keying
- ipsecme IP Security Maintenance and Extensions
- isms  Integrated Security Model for SNMP
- keyprov Provisioning of Symmetric Keys
- kitten Kitten (GSS-API Next Generation)
- krb-wg Kerberos
- ltans Long-Term Archive and Notary Services
Survey Projects (Cont)

- msec Multicast Security
- nea Network Endpoint Assessment
- pkix Public-Key Infrastructure (X.509)
- sasl Simple Authentication and Security Layer
- smime S/MIME Mail Security
- syslog Security Issues in Network Event Logging
- tls Transport Layer Security
Survey Projects (Cont)

Recent Issues in Internet Research Task Force (IRTF)
- Anti-Spam Research Group (ASRG)
- Crypto Forum Research Group

Recent Security Issues in IEEE
- IEEE
- 802.3ah EPON Security
- 802.21 Regional Area Networks Security
- 802.15.3 Personal Area/Sensor Networks Security
- 802.11i Security
- 802.16e WiMAX Security
- 802.20 Mobile Broadband Security
Survey Projects (Cont)

Current Security Issues in ITU
- SG17 Security Study group
- ICT Security Roadmap

Current Security Topics in Leading Conferences
- DEFCON
Last Year’s Project

- Hands-on Projects:
  - Cafe Cracks: Attacks on Unsecured Wireless Networks
  - Net Vigilant: Network Monitor
  - Secure Data Exchange System: Minimizing Security Attacks Risks while Preserving Bandwidth
  - PHP Vulnerabilities in Web Servers
  - Type 2 Cross-site Scripting: An Attack Demonstration
Last Year’s Projects (Cont)

- **Survey Papers:**
  - A Summary of Hacking Organizations, Conferences, Publications, and Effects on Society
  - Web Single Sign-On Systems
  - Wireless Hacking Tools
  - Survey of Current Network Intrusion Detection Techniques
  - A Survey of the Prominent Quantum Key Distribution Protocols
  - Secure Ballots Using Quantum Cryptography
  - A Survey of Peer-to-Peer Network Security Issues
  - Overview of Recent Developments on Generic Security Services Application Programming Interface
Project Schedule

Mon 02/09/09  Topic Selection/Proposal
Wed 02/18/09
Mon 02/23/09  References Due
Mon 03/02/09  Outline Due
Mon 03/30/09  Final Report/Demo Due
Mon 04/06/09  Reviews/comments Returned
Mon 04/13/09  Revised Report Due
HTML – An Intro

<HTML>
<HEAD>
...
</HEAD>
<BODY>
...
</BODY>
</HTML>
HTML Intro (2)

<HTML>
<HEAD>
<TITLE>CSE574S: Advanced Topics in Networking</TITLE>
<META NAME="AUTHOR" CONTENT="Raj Jain">
<META NAME="Classification" CONTENT="Technical">
<META NAME="Keywords" CONTENT="Quality of Service, Voice over IP">
<META NAME="Description" CONTENT="Lectures and reports on recent advances in networking">
</HEAD>
<BODY>
<H1>CSE571S: Network Security</H1>
<H2>Issue 1: Introduction</H2>
1.1 Local Area Networks

- Item 1

Google

Section 2

Section 2

[Raj Jain's Photo]
Report suitable for web publication
Strictly follow format, style guidelines
No copyright violations
Technical quality
Homework 1P

- Search web pages, books, and journal articles from ACM Digital Library, Applied Science, Compendex, ABI/INFORM Complete, and Knovel databases at Olin Library for one of the following topics:
  - Network Security Trends
  - Cryptography Trends
  - Internet Security Trends
  - Hacking Trends
  - Trends = Recent developments, Recent Advances, …

- On the web try the following search points:
  - [http://library.wustl.edu/findart.html](http://library.wustl.edu/findart.html)
  - [http://library.wustl.edu/fulltext/](http://library.wustl.edu/fulltext/)
  - [http://scholar.google.com](http://scholar.google.com)
  - [http://books.google.com](http://books.google.com)
Homework 1P (Cont)


- Ignore all entries dated 2004 or before. List others in the following format (up to 5 each):
  - Author, “Title,” publisher, year. (for 5 books)
  - “Title,” URL, One line description (for 5 web pages)
  - Author, “Title,” source (for 5 technical/magazine articles)

- Serially number the references and submit electronically to jain@cse.wustl.edu. The mail should have a subject field of “CSE 571S Homework 1P” (Please note the subject carefully)

- Make a list of other interesting search points and share with the class.
Project Homework 1P2

- Prepare your personal web page. Must include your photograph
- Use meta-HTML commands in the header to indicate title, keywords, description, etc
- Must use at least all the commands listed in “HTML Intro” slides. Use others as appropriate.
- Use only a text editor
- Submit a link to the page via email to jain@cse.wustl.edu with a subject field of: CSE 574S Homework 2
- Validate your page on:
  - W3C Markup Validation Service, http://validator.w3.org/